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Working Paper No.46

THE LEATHER INDUSTRY IN TAMIL NADU - ITS ROLE AND SOME ASPECTS OF ITS TRANSFORMATION DURING 1960 TO 1978-79 AS SEEN THROUGH THE ANNUAL SURVEY OF INDUSTRIES

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The Leather Industry in Tamil Nadu - Its Role and Some Aspects of Its Transformation During 1960 to 1978-79 As Seen Through the Annual Survey of Industries

Abstract

The paper examines the position of the leather industry in Tamil Nadu in relation to that in India. It analyses some aspects of the change that have come about in the industry in Tamil Nadu in the seventies as observable through the Annual Survey of Industries (ASI).

The data source, that is, the ASI is discussed at length covering the reports published not only by the Central Statistical Organisation - including the results for the census sector and from 1973-74 onwards, summary results for the factory sector - but also by the National Sample Survey Organisation - including the results for the sample sector. The census sector comprises of the factories employing 50 or more workers with power and 100 or more without power. The remaining factories fall in the sample sector.

The changes that have occurred in each of the three divisions of the leather industry - the leather tanning and finishing industry; leather footwear industry and leather products industry - are dealt with separately. It is found that the leather tanning and finishing industry which was highly labour intensive in the sixties, has been growing in capital intensity in the late seventies. Secondly the sample sector has been declining in importance in terms of its contribution to employment, output and value added in the entire factory sector. Further, consequent to the trend set towards the census sector factories, labour absorption has grown at a faster rate in the seventies than in the sixties.

The footwear industry in Tamil Nadu, is also growing in capital intensity in the late seventies. The rate of growth has been such that the industry in Tamil Nadu is more capital intensive than that in the rest of India.

Compared to the footwear industry and the tanning and finishing industry in Tamil Nadu the products industry is less significant.

Analysing the spatial pattern of distribution of the industry, it is interesting to notice that all the three divisions of the leather industry are concentrated in the North Arcot district of Tamil Nadu.

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THE LEATHER INDUSTRY IN TAMIL NADU - ITS ROLE AND SOME ASPECTS OF ITS TRANSFORMATION DURING 1960 TO 1978-79 AS SEEN THROUGH THE ANNUAL SURVEY OF INDUSTRIES *

The objective of the paper is to examine the position of the leather industry in Tamil Nadu in relation to that in India and analyse some aspects of the changes that have come about in the industry in Tamil Nadu in the seventies as observable through the Annual Survey of Industries.

The paper is in six sections. In the first section we discuss the data source, that is the Annual Survey of Industries. Prior to moving in to analyse the leather industry in Tamil Nadu in the third section, an introduction is presented in the second section. The leather tanning and finishing industry and the leather manufactures industry are taken up for discussion in the fourth and fifth sections respectively. The spatial distribution of the industry among the districts in Tamil Nadu is presented in the next section. In the final section some concluding remarks are spelt out.

I Data Source - The Annual Survey of Industries

The reports of the Annual Survey of Industries are being (hereafter ASI for the sake of brevity) are being published from 1959 onwards. The ASI replaces the Census of Manufacturing Industries, which began in 1946, and the Sample Survey of Manufacturing Industries, which began in 1950.

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*I wish to thank Mr.K.Bharathan, Dr.C.T.Kurien and Dr.K.Nagaraj for their comments on an earlier draft of the paper.

ASI is conducted under the Collection of Statistics Act, 1953 and the Collection of Statistics (Central) Rules framed thereunder in 1959. The rules are not applicable to Jammu and Kashmir, where it is conducted under the Jammu and Kashmir Collection of Statistics Act, 1961 and the Rules framed thereunder in 1964.

ASI extends to all the states and the Union territories except the states of Sikkim and Nagaland and the union territories of Arunachal Pradesh, Dadra and Nagar Haveli and Lakshadweep Islands.

ASI covers all the factories registered under the Factories Act, 1948. They consist of establishments using power and employing 10 or more workers and those not employing power but employing 20 or more workers on any day of the proceeding twelve months.

As such the ASI frame is based on the lists of registered factories/units maintained by the Chief Inspectors of Factories in each state and licensing authorities in respect of bidi and cigar units and electricity undertakings.

For operational purposes, the ASI dichotomises the factories into the census sector and non-census (sample) sectors. Factories employing 50 or more workers and using power and those employing 100 or more but not using power constitute the census sector. Units employing 10-49 workers with power and 20-99 workers without power constitute the sample sector.

All the units in the census sector and some in the sample sector are enumerated completely, with the criteria for complete enumeration changing from time to time.

The fieldwork of the survey is carried out by the Field Operations Division of the National Sample Survey Organisation through its network of regional/sub-regional offices located

in different parts of the country. The processing, tabulation and publication of the results for the census sector and the summary results for the factory sector from 1973-74 are the responsibilities of the Central Statistical Organisation. The responsibility for the processing and the preparation of the results for the sample sector lies with the National Sample Survey Organisation. Till 1970 they were published in National Sample Survey reports (and thereafter in Sarvekshana.)

The data for the census sector are presented in the reports of the ASI. It is published in ten volumes. Data is cross classified by industry and by state. In lieu of the secrecy clause, whenever there are less than 3 factories in an industry, industries in two or more states are clubbed together and published. Also clubbing of an industry with another in the same State occurs. Data is presented in seven detailed tables - number of factories; productive capital employed; employment, man-hours and emoluments; fuel, electricity, lubricants etc. consumed; materials consumed; products and by products manufactured and finally value added by manufacture.

The data for the sample sector are presented in the reports of the National Sample Survey Organisation. Two reports each carrying summary results and detailed results of the ASI for the sample sector were published every year till 1970.

From 1973-74 onwards, a volume on the summary results of the ASI for the factory sector as a whole, covering both the census and non-census sectors is being published every year. The report on the summary results provides information on 20 important characteristics recorded in the summary block of the ASI schedule. The characteristics include number of factories, amounts of fixed capital, working capital, invested

capital, outstanding loans, number of workers and all employees, amount of wages to workers and total emoluments, number of employee man-days, value of fuels consumed, materials consumed, total input, value of products, gross output, depreciation, value added and net income. The data, is, however, classified only industry wise. Cross-classification of data according to state and industry is absent.

For the purposes of the paper, the data on the leather industry in Tamil Nadu from 1974-75 onwards has been obtained from the department of Statistics, Madras. For the years 1975-76 to 1978-79, the ASI data classified according to industries is also published in the Industrial Profile of Tamil Nadu, 1980 and 1982.

The data published in the ASI has certain limitations arising from the following grounds: (1) Non-response of the units (2) Reference period and (3) Sampling procedure for the sample sector.[1]

Non-response was to the extent of 1-2 per cent of employment during 1976-77 to 1978-79.[2] Non-response limits the use of data because adjustments are not made for it and the data relates to the responding units only. On the other hand, the Department of Statistics, Madras, adjusts for non-response and then results are boosted for the whole sample sector.

A second major limitation arises from ASI's reference period. Till 1965, the reference period was the calendar year. From 1966 to 1971, the reference period was the accounting year of the units concerned, ending on any day between April 11 and March 31. From 1973-74, though the ASI reports mention the reference period as April-March each year, information furnished for most of the items in the returns relates

to the accounting year of the factory ending on any day between April 1 and March 31. As a result wide variations are bound to exist in the actual reference period across different factories. Secondly, in making inter-temporal comparisons, the conclusions drawn are to be qualified by the limitation arising from the difference in reference period over time.

Regarding the sampling procedure, till 1967, the sample sector was stratified according to industries and states and samples were drawn from each strata. From 1968, it was decided to cover the entire sample universe in the course of the three rounds of ASI 1968, ASI 1969 and ASI 1970. Hence one-third of the units in the sample sector were surveyed each year and from this the results for the entire sample sector, except completely enumerated units, were estimated. From 1973-74, one-half of the units in the non-census sector are enumerated every year and the results are doubled to arrive at the data for the whole sample sector. It is obvious that the sample sector data are estimates. Second, when making inter-temporal comparisons, the changing method of sampling and final estimation procedure limits the comparability of the data and the conclusions drawn using the data are to be qualified.

Deflators

Normally in inter-temporal studies, it would be expected that comparisons are made after allowing for price changes. ASI data, however, is presented at current prices. Hence we need deflators to arrive at values at constant prices. Principally in our study, three variables - fixed capital, value added and wages - have to be deflated before comparisons are made and valid conclusions are drawn.

Fixed capital is a highly heterogenous variable consisting of capital invested on land and building as well as that on plant and machinery. The latter would be of different vintages

incorporating different technologies. There are wide variations across industries also. Hence no deflator will be without limitations. In the absence of deflators for individual industries, we are using the index by which gross domestic capital formation has been deflated in National Accounts Statistics. For 1960 to 1970, the index for deflating gross domestic capital formation for manufacturing industries with base 1960 has been used. From 1973-74 to 1978-79, the index for deflating gross domestic capital formation in registered manufacturing industries with base as 1970 has been employed. A uniform deflator for the sixties and the seventies is not available. The deflator suffers from two main limitations. The index is for all manufacturing industries/all registered manufacturing industries. Industry-wise index if computed may vary widely from the uniform index for all industries. Secondly the index is on all India basis. State-wise index is also not available. A third limitation arises from the way in which we use the deflator. To arrive at the value of fixed capital at constant prices, it would be expected that new investment and not capital stock be deflated every year. The index is the one for deflating gross domestic capital formation, but from ASI, it is not possible to estimate new investments every year.

Value added is deflated by the index at which value added from registered manufacturing sector in the leather and leather and fur products industry is deflated. This deflator is also estimated from the National Accounts Statistics.

Wages are deflated by consumer price index for industrial workers. The index is computed for only a few places in Tamil Nadu by the Department of Statistics, Madras. North Arcot and Chengalpattu, the first two places of concentration of workers in the leather industry do not figure in the few places. Hence the index applicable to Tiruchirapalli, the

nearest place to North Arcot and Chengalpattu is used to deflate wages.[2a/]

II A Prelude

The term leather industry encompasses three sectors - the tanning and finishing industry, the footwear industry and the leather products industry. There are three stages of production in the industry : the tanning stage, wherein the raw material is converted into tanned leather employing vegetable tanning or chrome tanning method; the finishing stage, wherein the tanned leather is finished and finally the product manufacturing stage wherein finished leather and in some cases tanned leather is converted into footwear and leather products. Leather products include wearing apparel like coats, gloves etc. of leather, wearing apparel of fur and pelts, fur and skin rugs and other leather consumer goods like hand bags, travel bags, belts, purses etc. Though leather footwear is also one of leather products, it is considered separately because it is a major product by itself.

In Tamil Nadu, the tanneries extend production to finishing in the same unit and most often the tanneries and finishing plants are vertically integrated in the same enterprise. Hence tanning and finishing industry is considered as a single entity. (This is true of the tanneries in the rest of India also.) This industry is linked forwards with both the leather footwear and leather products industry, in that the tanning and finishing industry supplies the tanned and finished leather as input to the leather footwear and products industry. But footwear and leather products industries are amenable for separate analysis.

Higher stages of production and value added

Each higher stage of production undertaken within the country results in more value added being retained in the economy. Finishing adds more value than tanning; products and footwear result in more value added than finishing. In Tamil Nadu, in 1978-79 for instance, the tanning and finishing industry showed Rs.10.41 added value per every Rs.100 of output. In other words, the ratio of value added to gross output was 10.41 per cent in the leather tanning and finishing industry.

The ratio in the footwear industry in Tamil Nadu was 15.59 per cent. In contrast the ratio for the Indian footwear industry was 27.19 per cent. The footwear industry in Tamil Nadu produced mostly footwear components, while the rest of India produced complete footwear. Hence the lower ratio of value added to output for Tamil Nadu footwear industry.

In the leather products industry in Tamil Nadu, the ratio was 25.96 per cent. On the other hand, the Indian leather products industry showed a marginally lower figure of 22.57 per cent.

The leather industry as a whole in Tamil Nadu showed a ratio of 10.65 per cent. Since 96.80 per cent of the output of the leather industry was composed of tanned and finished leather, the value added to gross output ratio of the leather industry is influenced largely by the leather tanning and finishing industry and hence the low ratio. For the country as a whole, the ratio for the leather industry was 13.44 per cent. Here the contribution of the tanning and finishing industry was only to the extent of 80.39 per cent. Hence the slightly higher ratio for the leather industry for the country as a whole compared to that for Tamil Nadu.

The Policy

Historically, Tamil Nadu has been important for the tanning industry. 50-60 per cent of the production of tanned leather in India and 70 per cent of its export was accounted for by Tamil Nadu. The tanners in Tamil Nadu concentrated mostly on the production and export of tanned leather till the early seventies. In 1973, a policy -- Export Trade Control Policy - was formulated. The policy attempted to restrict the exports of tanned leather so as to ensure that mostly finished leather and leather products entered the international markets. The trade policy had a strong impact on not only the composition of exports but also affected the internal structure of the industry because the industry was highly export oriented. After the policy the leather industry of Tamil Nadu has undergone vast changes. We analyse the transformation that has occurred in each sector of the leather industry- the tanning and finishing industry, the leather footwear industry nd leather products industry- separately.

Issues

Specifically the following issues are taken up for analysis in the paper.

1. The status of the Tamil Nadu leather industry in that in India.
2. The importance of the Tamil Nadu leather industry in the Tamil Nadu industrial economy.
3. The relative significance of each division of the leather industry.
4. Some aspects of the transformation that has come about in each division of the leather industry.

III The Leather Industry in Tamil Nadu

Importance of Tamil Nadu in Indian Leather Industry

The leather industry in India is concentrated in Tamil Nadu. The industry here has a over-bearing influence on the production of leather and leather products from the entire country. The significance of the leather industry in Tamil Nadu, when the Indian leather industry forms the backdrop is amply demonstrated by Table 1.

Table 1: Factories, Employment, Fixed Capital, Output and Value Added in the Leather Industry in India And Tamil Nadu in 1978-79

	All India	Tamil Nadu	Share of Tamil Nadu in India (Percentages)
Factories (No.)	797	351	44.04
Employment (No.)	48804	18091	37.07
Fixed Capital (Rs.lakhs)	5388	2909	53.99
Gross output (Rs.lakhs)	44947	27695	61.62
Value added (Rs.lakhs)	6039	2949	48.84

Source: Col.1. Central Statistical Organisation, ASI 1978-79, Summary Results for the factory sector.

Col. 2. Dept. of Statistics, Madras, Industrial Profile of Tamil Nadu, 1982 based on ASI 1978-79.

Percentage shares are computed.

Table 2: Factories, Employment, Fixed Capital, Output and Value Added in The Leather Industry in India and Tamil Nadu During 1960 to 1978-79

	1960	1965	1970	1974-75	1978-79
Leather Industry in India					
Factories (No.)	537	554	696	667	797
Employment (NO.)	21220	23255	26403	37427	48804
Fixed Capital (Rs. lakhs) [a]	275	418	927	1991	5388
Gross Output (Rs. lakhs) [a]	4905	5909	9981	20042	44947
Value Added (Rs. lakhs) [a]	545	794	1479	3731	6039
Leather Industry in Tamil Nadu					
Factories (No.)	240	226	298	299	351
Employment (No.)	9209	8130	12102	12019	18091
Fixed Capital (Rs. lakhs) [a]	63	128	311	786	2909
Gross Output (Rs. lakhs) [a]	2442	3371	5695	10836	27695
Value Added (Rs. lakhs) [a]	274	349	686	985	2949
Percentage Share of Leather Industry in Tamil Nadu in that in India					
Factories	44.69	40.79	42.82	44.83	44.04
Employment	43.39	34.96	45.84	32.11	37.07
Fixed Capital	22.74	30.64	33.54	39.47	53.99
Gross Output	49.79	57.05	57.05	54.07	61.62
Value Added	50.33	43.98	46.40	26.41	48.84

Source: CSO, ASI, Vol.IV and V, Results for the Census sector for the years 1960, 1965, 1970;
NSS Reports Nos. 96, 161, 224.
Department of Statistics, Madras-for 1974-75 for TN.
Department of Statistics, Madras, Industrial Profile of TN, 1982 for 1978-79 for TN and CSO, ASI, Summary Results for the factory sector 1974-75 and 1978-79, for the same years for India.

Note : a. Values at current prices.

The leather industry in Tamil Nadu ranked first, while that in West Bengal ranked second and that in Uttar Pradesh ranked third. Tamil Nadu industry ranked first in terms of factories, fixed capital, gross output and value added. On the other hand, the industry in West Bengal and Uttar Pradesh ranked second and third respectively in terms of only gross output and value added.3/

Indeed the leather industry in Tamil Nadu has been occupying a unique place in the Indian leather scenario right from the beginning of the history of the industry. The data base, that is, the ASI, however, limits our discussion to the sixties and seventies. The importance of the industry in Tamil Nadu in these two decades in the background of the Indian leather industry is captured in Table 2.

It is evident from the table that the predominance of the industry in Tamil Nadu has not changed after the implementation of the 1973 Export Trade Control Order. In fact, the share of fixed capital, gross output and value added have registered an increase in 1978-79 over their shares in the sixties. It is only employment that has shown a lower share in 1978-79 than that in 1960 and 1970.

Importance of the leather industry in the industrial economy of Tamil Nadu

In the Tamil Nadu industrial economy, the leather industry is the seventh most important industry measured in terms of gross output and value added.4/ The contribution of the industry in concrete quantitative terms will be clear from Table 3.

Table 3: Factories, Employment, Fixed Capital, Output and Value Added in All Industries in Tamil Nadu And in the Leather Industry in Tamil Nadu in 1978-79

	All Industries	Leather industry	Share of leather industry in all industries (in percentages)
Factories (No.)	9059	351	3.88
Employment (No.)	591844	18091	3.06
Fixed Capital (Rs. lakhs)*	163149	2909	1.78
Gross Output (Rs. lakhs)*	480172	27695	5.76
Value Added (Rs. lakhs)*	110259	2949	2.68

Source: Department of Statistics, Madras, Industrial Profile of Tamil Nadu 1982 based on the ASI 1978-79.

Note : *Values at current prices.

Not only in 1978-79, throughout the sixties and seventies, the leather industry has been accounting for more than 3 per cent of output and 2 per cent of employment. Only the share of fixed capital has registered a gradual increase and has reached a figure of 2 per cent. See Table 4.

Census and sample sectors in the leather industry

It is interesting to notice that as against all industries in Tamil Nadu as a whole - where the share of fixed capital, output and value added in the census sector is larger than that in the sample sector - the concentration of fixed capital, output and value added with the census sector in the leather industry of Tamil Nadu is low. For instance in 1978-79, the census sector of all industries

Table 4: Factories, Employment, Fixed Capital, Output and Value Added in All Industries in Tamil Nadu and Leather Industry in Tamil Nadu during 1960 to 1978-79

	All Industries in Tamil Nadu				
	1960	1965	1970	1974-75	1978-79
Factories (No.)	5622	5474	7033	6957	9059
Employment (No.)	270465	357409	466695	488167	591844
Fixed Capital (Rs. lakhs)	8857	43082	91458	101246	163149
Gross Output (Rs. lakhs)	31719	67111	144824	258555	480172
Value Added (Rs. lakhs)	7310	15564	29346	57729	96708
	Leather Industry in Tamil Nadu				
Factories (No.)	240	226	298	299	351
Employment (No.)	9209	8130	12102	12019	18091
Fixed Capital (Rs. lakhs)	63	128	311	786	2909
Gross Output (Rs. lakhs)	2442	3371	5695	10836	27695
Value Added (Rs. lakhs)	274	349	686	985	2949
	Percentage share of leather in all industries				
Factories	4.27	4.13	4.24	4.30	3.88
Employment	3.41	2.28	2.59	2.46	3.06
Fixed Capital	0.71	0.30	0.34	0.78	1.78
Gross Output	7.70	5.02	3.93	4.19	5.76
Value Added	3.75	2.24	2.34	1.71	2.68

Source and Note: As Table 2.

accounted for 18 per cent of factories but 75 per cent of workers, 89 per cent of fixed capital, 80 per cent of output and 76 per cent of value added. On the other hand, the census sector in the leather industry contributed to 20 per cent of factories, but 57 per cent of employment, 61 per cent of fixed capital, 66 per cent of output and 58 per cent of value added. While at the all industries level, the concentration with the census sector is four-fifths, that in the leather industry is only around 60-66 per cent.

Some final remarks

Inspite of a spectacular growth of fixed capital (at current prices) at the compound rate of 22.52 per cent per annum during 1960 to 1978-79, (in contrast to the growth rate of 16.7 per cent for all industries over the same period) the leather industry still has a dismally low share of 1.78 per cent in the fixed capital of all industries. The share of other variables on the other hand, have ranged from 3-6 per cent. As a result, each worker in the leather industry works with only Rs.16,080 of fixed capital at current prices compared to Rs.27,566 at the all industry level in 1978-79.

The leather industry can be said to be more productive rather than employment intensive as would be normally expected. The industry accounts for only 3 per cent of employment but nearly 6 per cent of output. Our conclusion, however, has to be diluted because the industry contributes to only 2.7 per cent of value added. On that criterion, the industry is less productive.

IV The Leather Tanning and Finishing Industry

Leather tanning and finishing industry in Tamil Nadu with respect to that in India

Here we examine as to how important is the leather tanning and finishing industry in Tamil Nadu in that in India and whether Tamil Nadu industry's significance has changed after the implementation of the 1973 Export Trade Control Policy.

A look at Table 5 will suffice to perceive the prominence of the leather tanning and finishing industry in Tamil Nadu. A notable feature as revealed by the table is that the significance of the industry expressed in both the quantitative magnitudes and in relative shares has only increased with the implementation of the policy. While the share of workers has moved up from around 50 per cent in the sixties to 66 per cent in 1978-79, the share of fixed capital has increased from 42 per cent in 1970 to 64 per cent in 1978-79. On the other hand, the share of output and value added has increased from two-thirds to three-fourths between 1970 and 1978-79.

The share of the State in factories is less than its share in workers and fixed capital in the Indian leather tanning and finishing industry. While Tamil Nadu had only 56 per cent of factories, it had 66 per cent of employment and 64 per cent of fixed capital. When we examine the number of workers and the amount of fixed capital per factory in the leather tanning and finishing industry in Tamil Nadu and that in the rest of India, which is presented in Table 6, we find that on an average, a factory in Tamil Nadu industry employed more labourers and fixed capital than that in the rest of India in the late seventies. This is almost a reversal of the trend in the sixties, wherein the factories in Tamil Nadu

Table 5: Factories, Employment, Fixed capital, Output and Value Added in the Tanning and Finishing Industry in India and in Tamil Nadu During 1960 to 1978-79

	1960	1965	1970	1974-75	1978-79
Tanning and Finishing Industry in India					
Factories (No.)	424	408	507	478	561
Employment (No.)	17830	15086	20652	17767	23728
Fixed Capital (Rs. lakhs)	243	311	691	1480	4055
Gross Output (Rs. lakhs)	4489	4909	8269	14680	36134
Value Added (Rs. lakhs)	464	546	1028	1968	3684
Tanning and Finishing Industry in TN					
Factories (No.)	229	218	283	276	316
Employment (No.)	8970	7938	11717	11160	15592
Fixed Capital (Rs. lakhs)	60	106	295	756	2589
Gross Output (Rs. lakhs)	2432	3328	5614	10691	26808
Value Added (Rs. lakhs)	271	339	669	959	2790
Percentage share of TN in All India					
Factories	54.01	53.30	55.60	57.74	56.33
Employment	50.31	52.62	56.74	62.81	65.77
Fixed Capital	24.81	34.29	42.28	51.07	63.85
Gross Output	54.17	69.53	67.90	72.82	74.15
Value Added	58.30	62.03	66.49	48.63	75.73

Source and Note: As Table 2.

employed less workers and fixed capital than that in the rest of India.

The implication of this trend is not difficult to see. The leather tanning and finishing industry in Tamil Nadu is coming to operate in factories of larger scale than that in the rest of India because employment per factory in the Tamil Nadu industry is rising significantly in relation to that in the rest of India.

Table 6: Labourers and Fixed Capital per Factory in the Leather Tanning and Finishing Industry in Tamil Nadu and the Rest of India, 1960 to 1978-79

	1960	1965	1970	1974-75	1978-79
1. Labourers per factory in					
a. Tamil Nadu	39	36	41	40	49
b. Rest of India	45	38	40	33	33
2. Fixed capital per factory in					
a. Tamil Nadu	26	49	104	274	819
b. Rest of India	94	107	177	359	598

Source: As Table 5.

Secondly the leather tanning and finishing industry in Tamil Nadu is turning out to be more capital intensive than that in the rest of India. (This is discussed in detail later.)

Leather Tanning and Finishing Industry in Tamil Nadu

Taking the leather tanning and finishing industry in Tamil Nadu separately for discussion, we find that by far, of the three divisions of the leather industry, this industry is the most important. For instance in 1978-79, in the leather industry of Tamil Nadu, the tanning and finishing industry accounted for 90 per cent of factories, 86 per cent of employment, 89 per cent of fixed capital, 97 per cent of output and 95 per cent of value added. In fact the relative significance of the tanning and finishing industry has declined in the seventies. Despite the decline, the industry is the most important among the three divisions of the leather industry as evident from Table 7.

Transformation of The Leather Tanning and Finishing Industry in Tamil Nadu

Starting with the product mix the leather tanning and finishing industry in Tamil Nadu has undergone a lot of changes in the seventies. The industry was producing mostly semi-finished leather (SFL) till the early seventies, when the Export Trade Control Policy was implemented. An analysis of the product mix of the census sector shows that 90 per cent of the total product was composed of SFL. Even the small share of finished leather (FL) was accounted by industrial FL like belts, saddlery etc. The leather tanning and finishing industry started producing FL in considerable quantities only from the mid-seventies. This change in the product mix has necessitated significant changes in the size structure and production structure of the industry.

The most striking of these changes has been (a) the decline of the sample sector in the share of employment in the industry in the seventies; (b) the increase in the

Table 7: Factories, Employment, Fixed Capital, Output and Value Added in the Leather Industry And Leather Tanning and Finishing Industry in Tamil Nadu During 1960 to 1978-79

	Leather Industry in Tamil Nadu				
	1960	1965	1970	1974-75	1978-79
Factories (No.)	240	226	298	299	351
Employment (No.)	9209	8130	12102	12019	18091
Fixed Capital (Rs. lakhs)	63	128	311	786	2909
Gross Output (Rs. lakhs)	2442	3371	5695	10836	27695
Value Added (Rs. lakhs)	274	349	686	985	2949
	Tanning & Finishing Industry in Tamil Nadu				
Factories (No.)	229	218	283	276	316
Employment (No.)	8970	7938	11717	11160	15592
Fixed Capital (Rs. lakhs)	60	106	295	756	2589
Gross Output (Rs. lakhs)	2432	3328	5614	10691	26808
Value Added (Rs. lakhs)	271	339	669	959	2790
	Percentage share of Tanning & Finishing Industry in the Leather Industry of TN				
Factories	95.42	96.46	94.97	92.31	90.03
Employment	97.40	97.64	96.82	92.85	86.19
Fixed Capital	95.24	82.81	94.85	96.18	89.00
Gross Output	99.59	98.77	98.58	98.66	96.80
Value Added	98.90	97.13	97.52	97.36	94.61

Source and Note: As Table 2.

capital intensity in both the census and sample sectors in the seventies and (c) the faster growth of employment in the seventies compared to the sixties.

Though the small sector has been accounting for about 80 per cent of factories throughout the sixties and seventies, employment of workers and fixed capital did not come anywhere near that level. As shown by Table 8, the share of the sample sector in total employment soared to the level of 59 per cent in 1970. After the implementation of the policy, it has exhibited a steady decline and in 1978-79, the share of employment in the sample sector reached a figure of 45 per cent. It is worth noticing that the share of the sample sector in employment remained above 52 per cent throughout the sixties and only in 1978-79, it has decreased to the level of 45 per cent.

The importance of the sample sector is declining in terms of its relative share not only in total employment but also in total value of output of the tanning and finishing industry in Tamil Nadu. Though the share of output in the sample sector has been declining in the pre-intervention period also, it has not fallen below 50 per cent. See Table 8. In the post-intervention period, however, it has decreased to a level of 35 per cent. The share of value added also in the sample sector has been declining. Though it has shown an improvement in 1978-79 over that in 1974-75, as is evident from Table 8, it is below the pre-intervention level. Hence in terms of its contribution mainly to employment and output but also to value added, the sample sector is slowly being relegated to the background.

It is surprising to note from Table 8 that value added by gross output ratio is very low for the sample sector in 1974-75. But the explanation is found in the fact that the year has been a bad one for exports. The value of all leather exports from Tamil Nadu has declined from Rs.1240.72 mln. in 1973-74 to Rs.963.37 mln. in 1974-75.[5/]

Table 8: Share of the Sample Sector in The Leather Tanning and Finishing Industry in TN During 1960 to 1978-79

	1960	1965	1970	1974-75	1978-79
Factories (No.)	198	181	239	222	256
	(86.5)	(83.0)	(84.5)	(80.4)	(81.0)
Employment (No.)	514[illegible]	4351	6918	5900	6987
	(57.4)	(54.8)	(59.0)	(52.9)	(44.8)
Fixed Capital(Rs.lakhs)	19.21	33.98	113.07	249.85	1063.64
	(31.9)	(31.3)	(38.3)	(33.1)	(41.1)
Gross Output(Rs.lakhs)	1622.69	1719.32	2896.20	4156.60	9269.66
	(66.7)	(51.7)	(51.6)	(38.9)	(34.6)
Value Added(Rs.lakhs)	168.74	169.08	337.57	198.92	1160.42
	(62.4)	(49.9)	(50.5)	(20.7)	(41.6)

Source: As Table 2.
Note: Figures in parentheses are shares.

In contrast to employment and output, the share of fixed capital in the sample sector has shown a tendency to increase continuously. It has increased from 33 per cent in 1974-75 to 41 per cent in 1978-79. The simultaneous decrease in the share of employment and the increase in the share of fixed capital is only indicative of the diminishing labour intensity of the sample sector. This also finds an expression in the upward movement of the degree of capital intensity in the sample sector, when we measure the degree of capital intensity by fixed capital per labourer.

The sample sector was relatively more labour intensive than the census sector in the sixties. This is well demonstrated by Table 9a. In contrast in the late seventies, the sample sector is approximately equally capital intensive as the census sector. The degree of capital intensity (expressed

by fixed capital per worker) in the sample sector has increased steeply at the annual rate of 38 per cent from Rs.1587 in 1973-74 to Rs.8064 in 1978-79; but that in the census sector has moved up only gradually at the annual rate of 11 per cent from Rs.5534 in 1973-74 to Rs.9391 in 1978-79. Consequently, the variation in the degree of capital intensity between the sample and census sectors has been narrowed.

Table 9: Fixed Capital Per Worker in The Leather Tanning And Finishing Industry in Tamil Nadu during 1960 to 1978-79

Table 9a: Fixed Capital Per Worker During 1960-1970

At Constant 1960-61 Prices

Fixed capital per worker in Rs. in the	1960	1962	1965	1967	1970
Census Sector	1072	1392	1629	2280	2249
Sample Sector	373	968	629	703	968
Industry as a whole	671	1169	1081	1372	1492

Table 9b: Fixed Capital Per Worker During 1973-74 to 1978-79

At constant 1970-71 prices

Fixed capital per worker in Rs. in the	1973-74	1974-75	1976-77	1978-79
Census Sector	5538	5696	6637	9391
Sample Sector	1587	2507	6093	8064
Industry as a whole	3511	4010	6372	8796

Source: As Table 8

In the industry as a whole, the degree of capital intensity has significantly increased in the seventies. Fixed capital per worker has moved up from Rs.671 to Rs.1492 between 1960 and 1970 (at constant 1960-61 prices) showing an annual growth rate of 8 per cent. In the seventies, however, fixed capital per worker has increased at the annual rate of 20 per cent from Rs.3511 in 1973-74 to Rs.8796 in 1978-79.

In assessing the degree of capital intensity of a technology, the working capital requirements should also be taken into consideration for two reasons. (1) To examine whether working capital requirements in the productive capital (fixed capital + working capital) requirements vary with the labour intensity of different techniques and (2) To assess whether only the degree of fixed capital intensity has increased with the capital intensive technique or both the degree of fixed capital intensity and working capital intensity has increased.

In the leather tanning and finishing industry in Tamil Nadu along with an increase in fixed capital costs per factory (as evident from Table 6), working capital requirements per factory also has increased. The ratio of working capital to fixed capital per factory has increased from 0.562 in 1970 to 0.685 in 1978-79. Viewed from a different angle, the share of working capital in productive capital has increased from 36 per cent in 1970 to 41 per cent in 1978-79.

Furthermore, while fixed capital per worker (at constant prices) has moved up from Rs.3511 in 1973-74 to Rs.8796 in 1978-79, working capital per worker (at current prices) has increased from Rs.4545.5 to Rs.11416.1 during 1970 to 1978-79.

Therefore, we infer that working capital requirements in productive capital has moved up and secondly the degree of both fixed capital intensity and working capital intensity has increased.

The degree of capital intensity, as seen above, has grown spectacularly in the industry in the seventies than in the sixties. Simultaneously employment in the industry has also increased at a faster rate in the seventies than in the sixties. While employment grew at a rate of only 2.71 per cent during 1960 to 1970, it increased at the rate of 8.72 per cent during 1974-75 to 1978-79.

There is a rapid growth in both the degree of capital intensity and labour absorption because the industry to a great extent is growing in capital intensiveness by installing machines for new extended processes of production (finishing) and simultaneously absorbing more labour and to a less extent by substituting machinery for labour for the existing tanning processes.

The rate of absorption of labour over balances the rate of displacement of labour, so that as a net effect, there is faster growth both in the degree of capital intensity and rate of labour employment.

The increase in the degree of capital intensity has demanded the employment of more employees at the non-worker level which are mostly at the supervisory and technical levels. It is found that while the number of non-workers grew at a rate of only 2.36 per cent per annum during 1960-70, the same increased at the rate of 16.41 per cent during 1974-75 to 1978-79.

With the increase in the degree of capital intensity, the share of wages in value added shows a decrease in the post-intervention period from that in 1970, although from 1975-76,

the share has shown an increasing trend. See Table 10. The movement of the technology towards a capital intensive one has served to alter the income distribution against the favour of workers. But with the increase in the share of wages in value added in the late seventies, the sharpness of the trend against the workers is reduced.

Though money wages and real wages per worker have shown a general tendency to increase, the real wages have shown only a negligible growth rate. While the money wages per worker has registered 10.19 per cent growth rate per annum, the real wages has increased at the rate of only 1.08 per cent during 1970 to 1978-79. Hence the real wages per worker has remained almost constant.

Table 10: Share of Wages in Value Added During 1970 to 1978-79

Years	Wages at constant 1970 prices Rs. lakhs	Value added at constant 1970-71 prices Rs. lakhs	Wages/ Value Added (percentages)
1970	248.59	668.988	37.16
1973-74	205.97	475.631	43.31
1974-75	152.40	521.193	29.24
1975-76	205.56	699.574	29.38
1976-77	366.00	1190.802	30.74
1977-78	253.13	751.354	33.69
1978-79	360.46	1051.651	34.28

Source: As Table 4

Table 11: Wages Per Worker in the Leather Tanning and Finishing Industry in Tamil Nadu During 1960 to 1978-79

Table 11a: Money Wages per Worker Per Annum

in Rs. at current prices

Wager per worker in the	1960	1965	1970	1974-75	1978-79
Census Sector	950	1644	2340	2008	4679
Sample Sector	1196	1573	1970	2937	4505
Industry	1091	1605	2122	2499	4601

Table 11b: Real Wages Per Worker Per Annum

in Rs. at constant 1970 prices

Wages per worker in the	1960	1965	1970	1974-75	1978-79
Census Sector	1710	2276	2340	1099	2353
Sample Sector	2153	2178	1970	1607	2265
Industry	1964	2222	2122	1367	2313

Source: As Table 4.

While the real wages per worker has shown some growth, the share of wages in value added has declined. With the change in the product mix, the value added in the industry at constant prices has grown at the rate of 5.82 per cent per annum but total wage bill has increased at the rate of only 4.75 per cent per annum during 1970 to 1978-79. While the real wages per worker has grown at the rate of 1.08 per

cent per annum, value added per worker has grown at the rate of 2.11 per cent per annum. Firstly an increase in wage cost has occurred along with an increase in productivity and not at the cost of a decrease in value added per worker. In fact value added has grown at a faster rate than wages. Only a part of this increase in value added has reached the workers as increase in wages. Hence the share of wages in value added shows a decrease. The distribution of value added is changing against the workers.

A final remark

In the sixties, when the factories produced mostly tanned leather, the fixed capital cost of providing employment in the sample sector was much less than that in the census sector. But in the seventies, specifically after the 1973 policy, the capital cost of providing employment in the sample sector has increased continuously. In 1978-79, the differential in capital cost between the sample and census sectors has been narrowed down significantly. Further like the degree of capital intensity which has become almost equal in both the census and sample sectors, the money and real wages, per worker also as evident from Table 11, have turned out to be approximately equal in the two sectors.

Not only the capital and wage cost of providing employment in the sample sector has moved up to the point of becoming equal to that in the census sector; but also the labour in the sample sector seemed to be marginally less productive than the labour in the census sector. While the value added at current prices per labourer in the sample sector was Rs. 16608, that in the census sector was Rs. 18938.

The sample sector is not economically superior than the census sector -- in terms of capital cost and wage cost per worker and productivity per worker it ranks lower than the

census sector. In the pre-intervention period, the sample sector had the advantage of employing small groups of labour for producing exportable semi processed leather using labour-intensive methods of production. In the post intervention period, when the export of semi processed leather is restricted, in favour of finished leather to be produced by capital intensive method of production, the sample sector becomes uneconomic. With small groups of labour and small scale of investment, it cannot produce a saleable product. If it diversifies, scale of both employment and investment increases. Statistically the expanding factories will move into the census sector. Hence in the seventies, the sample sector offers so qualitative or quantitative advantage over the census sector.

V Leather Manufactures Industry

It has been a matter of concern that though the tanning and finishing industry was concentrated in TN, it did not lead to the development of subsequent stages of the industry, that is leather footwear and leather products industry in TN. The share of leather manufactures including footwear and leather products in the leather industry in TN was palpably low. After the implementation of the policy, however, the manufactures industry has registered some growth. See Table 12.

Leather Footwear Industry

A large proportion of the growth that has been shown by the manufactures industry has come from the footwear industry. Indeed in TN, the footwear industry was predominating the manufactures industry in the sixties also. But signs of new growth has also come from the footwear industry.

Although the footwear industry accounted for only 40 per cent of the factories in the manufactures industry in 1978-79, it had much higher shares in other variables in the

Table 12: Factories, Employment, Fixed Capital, Output and Value Added in the Leather Industry and Leather Manufactures Industry in Tamil Nadu During 1960 to 1978-79

	1960	1965	1970	1974-75	1978-79
Leather Industry in Tamil Nadu					
Factories (No.)	240	226	298	299	351
Employment (No.)	9209	8130	12102	12019	18091
Fixed Capital(Rs.lakhs)	63	128	311	786	2909
Gross Output(Rs.lakhs)	2442	3371	5695	10836	27695
Value Added(Rs.lakhs)	274	349	686	985	2949
Leather Manufactures Industry in Tamil Nadu					
Factories (No.)	11	8	15	23	35
Employment (No.)	239	192	385	859	2499
Fixed Capital(Rs.lakhs)	3	22	16	30	320
Gross Output(Rs.lakhs)	10	43	81	145	887
Value Added(Rs.lakhs)	3	10	17	26	159
Percentage share of leather manufactures in leather industry in Tamil Nadu					
Factories	4.58	3.54	5.03	7.69	9.97
Employment	2.60	2.36	3.18	7.15	13.81
Fixed Capital	4.76	17.19	5.15	3.82	11.00
Gross Output	0.41	1.23	1.42	1.34	3.20
Value Added	1.10	2.87	2.48	2.64	5.39

Source and Note: As Table 2.

manufactures industry - 70 per cent in employment, 90 per cent of fixed capital, 77 per cent of output and 67 per cent of value added. See Table 13.

The phenomenal growth of the footwear industry in Tamil Nadu will be evident from Table 12. While employment has grown at the annual rate of only 4.8 per cent during 1960-70, it has registered a rate of growth of 30.35 per cent per annum during 1974-75 to 1978-79. Fixed capital has grown at an even more impressive rate of 101 per cent per annum in the seventies (as against a rate of 18 per cent in the sixties).

Table 13: Leather Manufactures Industry in Tamil Nadu in 1978-79

	Factories No.	Employment No.	Fixed Capital Rs.lakhs	Output Rs.lakhs	Value Added Rs.lakhs
Leather Footwear	14	1741	288	686	107
Leather Products	21	758	32	201	52
Leather Manufactures	35	2499	320	887	159
Relative Share in Percentages					
Leather Footwear	40.00	69.67	90.00	77.34	67.30
Leather Products	60.00	30.33	10.00	22.66	32.70
Leather Manufactures	100.00	100.00	100.00	100.00	100.00

Source: Dept. of Statistics, Madras, Industrial Profile of Tamil Nadu, 1982.

It is interesting to note that most of the growth has been registered in the late seventies- 1977-78 and 1978-79 and in the Census sector. Though the census sector accounted for only 36 per cent of all the factories in the footwear industry, all other variables are concentrated in this sector only. The sector accounted for 80 per cent of employment and fixed capital, 89 per cent of output and 71 per cent of value added.

On an average, a factory producing footwear in the census sector in TN employed 279 workers and Rs.46 lakhs of fixed capital. In contrast, a footwear factory in the census sector in the country as a whole employed 549 workers but Rs.27 lakhs of fixed capital only. Clearly a footwear factory in the census sector in TN is more capital intensive than the average Indian footwear factory in the same sector. As a result of the influence of the census sector, an average factory in the footwear industry as a whole in TN employs more fixed capital than the one in the country as a whole.

Consequently, though in general the significance of the TN footwear industry in the background of the Indian footwear industry has improved after the implementation of the policy, the share of fixed capital of the TN industry is nearly three times as that of factories, labour or output. See Table 14. The footwear industry in TN accounts for only 8 per cent of output or labour employed but it contributes to 25 per cent of fixed capital.

The undue share of TN industry in fixed capital is related more to the type of the product produced by the industry (in TN). It produces more of components rather than complete footwear. In the total Indian footwear components exports of Rs.836.5 lakhs in 1978-79, TN accounted for 76 per cent (Rs.636.7 lakhs). On the other hand, TN contributed to only Rs.55 lakhs to the total complete footwear exports of Rs.1499.9 lakhs from India, its share being only 3.67 per cent in the same year.[7]

Table 14: Factories, Employment, Fixed Capital, Output and Value Added in the Leather Footwear Industry in Tamil Nadu and that in India During 1960 to 1978-79

	1960	1965	1970	1974-75	1978-79
Leather Footwear Industry in India					
Factories (No.)	69	94	108	138	153
Employment (No.)	2446	6781	3998	17808	23022
Fixed Capital(Rs.lakhs)	18	58	162	916	1163
Output(Rs.lakhs)	248	797	1276	7068	7918
Value Added(Rs.lakhs)	59	199	381	2000	2153
Leather footwear Industry in Tamil Nadu					
Factories (No.)	5	1	4	11	14
Employment (No.)	60	6	96	603	1741
Fixed Capital(Rs.lakhs)	1	0.2	6	18	288
Output (Rs.lakhs)	3	0.3	41	60	686
Value Added (Rs.lakhs)	1	0.1	8	15	107
Percentage Share of TN in India					
Factories	7.25	1.06	3.70	9.30	9.15
Employment	2.45	0.09	2.40	6.42	7.56
Fixed Capital	6.41	0.31	3.66	11.38	24.76
Output	1.21	0.04	3.21	1.17	8.66
Value Added	1.48	0.05	2.14	0.97	4.97

Source and Note: As Table 2

It has to be mentioned here that the quality of the footwear components must suit international standards. The components mainly shoe uppers or shoe soles produced in India must fit with the shoe soles or shoe uppers produced in the countries that import Indian components. Hence Indian footwear components must satisfy international quality specifications.

The components are therefore produced in highly mechanised factories, some cases involving foreign collaborations. The components producing factories are hence much more capital intensive than those producing complete open footwear like sandals and chappals. Complete close footwear -- mainly shoes -- production is comparatively low in India. Mostly components for shoes are produced here, and this also concentrated in Tamil Nadu is a post intervention phenomenon.

The value added by components is lower than that by complete open footwear. While value added per unit of fixed capital was 1.85 for Indian footwear industry it was only 0.37 for the Tamil Nadu industry. As mentioned before this is due to the fact that 92 per cent of the output of Tamil Nadu footwear industry was composed of components while that for India was only 36 per cent. The low value added to fixed capital ratio in Tamil Nadu, may also be to some extent due to the under-utilisation of capacity as the component industry is an infant industry.

After the implementation of the policy in 1973, the tanners in Tamil Nadu extended production to FL and further to leather manufactures. In the latter section, they branched mainly into footwear components because semi-manufactures of leather faced less trade and tariff barriers than complete footwear imports into all developed market economies, who are the major importers of Indian leather and leather products.[8/]

In fact it is only due to the overwhelming share of components, that TN's share in value added in the footwear industry is much less (at 4 per cent) than its share in output (at 8 per cent). See Table 14. Also, the value added to output ratio in Tamil Nadu industry is lower at 15.6 per cent compared to 27.2 per cent for all India.

Leather Products Industry

Though the leather products industry is less important than footwear industry in TN, the former results in more value added being retained within the economy for every unit of output than that in the case of latter. Hence even a small growth of the products industry is an encouraging sign.

The leather products industry in TN are producing goods like wearing apparel like coats, gloves etc. consumer goods other than footwear and wearing apparel, fur and skin rugs. Factories producing consumer goods other than apparel and footwear, however, predominate in TN. They account for 71 per cent of factories, 81 per cent of employment, 64 per cent of fixed capital, 80 per cent of output and 74 per cent of value added of the leather products industry. This will be evident from Table 15.

Table 15: Leather Products Industry in TN in 1978-79

Leather Products	No. of Factories	No. of workers	Fixed capital Rs.lakhs	Gross output Rs.lakhs	Value added Rs.lakhs
1.Wearing apparel	2 (9.523)	56 (7.39)	8.53 (26.64)	18.56 (9.23)	3.90 (7.47)
2.Consumer goods (other than 1 above & footwear)	15 (71.43)	614 (81.00)	20.58 (64.27)	159.96 (79.54)	38.37 (73.49)
3.Fur and skin rugs	2 (9.523)	60 (7.92)	--	1.87 (0.93)	1.61 (3.08)
4.Products not else-where classified	2 (9.523)	28 (3.69)	2.91 (9.09)	20.71 (10.30)	8.33 (15.96)
All other products	21 (100.00)	758 (100.00)	32.02 (100.00)	201.10 (100.00)	52.21 (100.00)

Source: Dept. of Statistics, Madras, Industrial Profile

The leather products industry taken as a group has registered impressive growth, considering the small base. It will be clear from Table 16 and hence it need not be repeated again that most of the growth has occurred in the post-intervention period, especially during 1974-75 to 1978-79.

Consequent to its progress, the share of the leather products industry in the Indian leather products industry has also improved and this will also be evident from Table16. While the share of factories has increased from 13.58 per cent in 1970 to 25.30 per cent in 1978-79, the share of employment has moved up from 16.49 per cent to 36.90 per cent; output has increased from 9.05 per cent to 22.47 per cent and value added has gone up from 12.86 per cent to 25.85 per cent during the same period of 1970 to 1978-79.

It is worth noticing that the leather products industry in TN is highly labour intensive compared to either the tanning industry or the footwear industry. The leather products industry employed one worker for every Rs.2237 of fixed capital (at 1970-71 prices). In contrast, the fixed capital per labourer in the tanning industry is Rs.8796 and that in the footwear industry is Rs.8759 both at 1970-71 prices.

As pointed out before, the leather products industry results in the largest value added per every unit of output. In 1978-79 for instance, the ratio of value added to gross output is 26 per cent.

Further the industry still operated on a small scale. An average factory employed Rs.1.5 lakhs of fixed capital and 36 labourers. 76 per cent of all the factories were in the sample sector. While the tanning and finishing industry as well as the footwear industry were moving towards capital intensive production, the leather products

Table 16: Factories, Employment, Fixed Capital, Output and Value Added in the Leather Products Industry in India and that in Tamil Nadu During 1960 to 1978-79

	1960	1965	1970	1974-75	1978-79
Leather Products Industry in India					
Factories (No.)	44	52	81	60	83
Employment (No.)	944	1388	1753	1836	2054
Fixed Capital(Rs.lakhs)	15	50	74	65	170
Output(Rs.lakhs)	168	203	437	474	895
Value Added(Rs.lakhs)	22	48	70	74	202
Leather Products Industry in Tamil Nadu					
Factories (No.)	6	7	11	12	21
Employment (No.)	179	186	289	256	758
Fixed Capital(Rs.lakhs)	1	21	10	12	32
Output(Rs.lakhs)	7	43	40	85	201
Value Added(Rs.lakhs)	3	10	9	11	52
Percentage share of TN in India					
Factories	13.64	13.46	13.58	20.00	25.30
Employment	18.96	13.40	16.49	13.94	36.90
Fixed Capital	8.40	4.84	13.13	18.91	18.83
Output	4.41	21.18	9.05	18.00	22.47
Value Added	12.08	20.83	12.86	14.87	25.85

Source and Note: As Table 2.

industry still remains highly labour intensive. It has all the characteristics of an industry that can absorb more labour at less capital costs and also show high productivity. Hence signs of even small growth of this industry has large dimensions.

VI Spatial Pattern of Distribution of the Leather Industry in Tamil Nadu in 1978-79

Taking the leather tanning and finishing industry, we find that the industry is present in only 6 of the 14 districts of TN. Secondly, the concentration of the industry in North Arcot is very large and that in Chengalpattu and North Arcot taken together is absolute.

Table 17: Dispersion of the Leather Tanning and Finishing Industry Within Tamil Nadu in 1978-79

Districts	Factories No.	Empt. No.	Fixed Capital Rs. lakhs	Gross Output Rs. lakhs	Value Added Rs. lakhs
Madras	4	28	4.2	24.42	6.28
Chengalpattu	51	3160	771.39	5206.17	625.61
North Arcot	227	10771	1583.36	17173.51	1818.82
Tiruchirapalli	9	390	73.39	1655.06	89.61
Madurai	14	690	103.48	1994.20	148.77
Coimbatore	10	553	52.35	754.42	100.93
Tamil Nadu	315	15592	2588.23	26807.87	2790.03

Relative share in percentages

District	Factories	Employment	Fixed capital	Gross output	Value added
Madras	1.27	0.18	0.16	0.09	0.23
Chengalpattu	16.19	20.27	29.80	19.42	22.42
North Arcot	72.06	69.08	61.18	64.06	65.19
Tiruchirapalli	2.86	2.50	2.84	6.17	3.21
Madurai	4.44	4.43	4.00	7.44	5.33
Coimbatore	3.18	3.56	2.02	2.82	3.62
Tamil Nadu	100.00	100.00	100.00	100.00	100.00

Source: Department of Statistics, Madras, Industrial Profile of Tamil Nadu, 1982.

The districts of North Arcot, Chengalpattu, Madurai, Coimbatore, Tiruchirapalli, and Madras, share the industry among them. The two districts of North Arcot and Chengalpattu account for 80-90 per cent of all the principal characteristics no. of factories, employment, fixed capital, output, and value added. See Table 17. Among the other districts, Madurai, Tiruchi, and Coimbatore seem to be equally important. Only Madras has a negligible share of 0.1 to 1 per cent in all the major variables. This will be evident from Table 17.

Though North Arcot and Chengalpattu account for 80-90 per cent of the industry, they are not equally important. North Arcot accounts for 60-70 per cent of the variables in the industry but Chengalpattu contributes to only 15-25 per cent.

Further there is qualitative difference between the industry in North Arcot and that in Chengalpattu. Factories in North Arcot are smaller and less capital intensive than those in

Chengalpattu. While a factory in North Arcot employs only 47 workers and Rs.6.975 lakhs of fixed capital, that in Chengalpattu employs 62 workers and Rs.15.125 lakhs fixed Capital. See Table 18.

Table 18: Some Ratios for the District Tanning and Finishing Industries

Districts	Empt./ Factory Number	Fixed capital/ Factory Rs.lakhs	Fixed capital/ worker Rupees	Value Added/ worker Rupees
Madras	7	1.05	15,000	22,429
Chengalpattu	62	15.125	24,411	19,798
North Arcot	47	6.975	14,700	16,886
Tiruchirapalli	43	8.154	18,818	22,977
Madurai	49	7.391	14,997	21,561
Coimbatore	55	5.235	9,401	18,251
Tamil Nadu	50	8.217	16,600	17,894

Source: Table 17

Also each worker in North Arcot works with only Rs.14700 of fixed capital compared to Rs.24,411 available to a worker in the industry in Chengalpattu. The industry in Chengalpattu is more capital intensive and also organised in large factories because each factory works with not only more fixed capital (which would be available to fewer workers and hence would limit the industry to being only capital intensive) but also with more number of workers than that in North Arcot. In fact each factory employs workers and fixed capital much above the state average (of 50 workers and Rs.8.217 lakhs) and the reverse is true for North Arcot.

Of the industry in other districts, that in Tiruchi is more capital intensive-it employs only 43 workers per factory but Rs.8.154 lakhs of fixed capital and Rs.18,818 of fixed capital is available to each worker. See Table 18. The industry here employs the second lowest number of workers per factory but second highest amount of fixed capital per factory and per worker.

The industry in Coimbatore is relatively labour intensive-it employs 55 workers (as against state average of 50) but Rs.5.235 lakhs of fixed capital (as against state average of Rs.8.217 lakhs) per factory and Rs.9467 of fixed capital per worker (the State average is Rs.16,600).

The industry in all the districts except North Arcot is more productive than that in the State as a whole because the value added per worker in the former is much higher than that in the latter. See Table 18. Also from Table 18 it is evident that the value added per worker in North Arcot industry is the lowest. It is clear from Table 17 that only North Arcot has a larger share in employment than that in value added. Hence the low productivity per worker.

Therefore, though all the ratios and arguments are against the concentration of the tanning and finishing industry in North Arcot, we still find that there is a high degree of concentration here. There are historical reasons for the initial location and further concentration of the industry in North Arcot and it is not a recent phenomenon. A not very close ranking second concentration is found in Chengalpattu. The industry is also spread in Madurai, Tiruchirapalli, Madras and Coimbatore.

Footwear Industry in the Districts

The distribution of the footwear industry among the districts is even more skewed than the tanning industry. Only the three districts of Madras, Chengalpattu and North Arcot can boast of any share in footwear industry.

The predominance of North Arcot is felt in this industry also. Though it accounts for only 35 per cent of factories, 66 to 86 per cent of other variables of employment, fixed capital, output and value added is contributed only by the industry in North Arcot. See Table 19.

Chengalpattu accounts for an equal number of factories but only 13 per cent of employment, 10 per cent of fixed capital, 8 per cent of output and 18 per cent of value added.

Madras has approximately the same share as Chengalpattu but the industry here operates with only 3 per cent of fixed capital.

It is interesting to note that as against tanning, footwear production in North Arcot is organised in large and capital intensive factories. Each factory in North Arcot employs five and half times the labour and 10 times the fixed capital as that in Chengalpattu. See Table 20. The explanation offered for Tamil Nadu will suit North Arcot because the components factories are situated mostly in this district. On the other hand Chengalpattu has a larger proportion of factories producing complete open footwear and the factories in Madras produce mostly complete open footwear. Each worker is also working with more fixed capital in North Arcot than in Chengalpattu. While fixed capital per worker in the footwear industry in North Arcot is Rs. 18,436, that in Chengalpattu is only Rs. 12,804.

Table 19: Dispersion of the Leather Footwear Industry Within Tamil Nadu During 1978-79

Districts	Factories No.	Employment No.	Fixed capital Rs. lakhs	Gross output Rs. lakhs	Value Added Rs. lakhs
Madras	4	159	9.19	146.86	17.56
North Arcot	5	1352	249.26	482.69	70.54
Chengalpattu	5	230	29.45	56.30	18.85
Tamil Nadu	14	1741	287.90	685.85	106.95

Relative Share in Percentages

Districts	Factories	Employment	Fixed Capital	Gross output	Value added
Madras	28.57	9.13	3.19	21.41	16.42
North Arcot	35.715	77.66	86.58	70.38	65.96
Chengalpattu	35.715	13.21	10.23	8.21	17.62
Tamil Nadu	100.00	100.00	100.00	100.00	100.00

Source: As Table 17.

Table 20: Some ratios for the District Footwear Industries in 1978-79

Districts	Employment/ Factory (No.)	Fixed Capital per factory (Rs. lakhs)	Fixed Capital per Labourer (Rs.)
Madras	40	2.2975	5780
North Arcot	270	49.8520	18436
Chengalpattu	46	5.8900	12804
Tamil Nadu	124	20.5643	16537

Source: As Table 17.

Leather Products Industry in the Districts

Complete data on the dispersion of the leather industry within the districts is not available. Data on only output is available. If we consider that, again North Arcot predominates as seen in Table 21.

Table 21: Output in the Leather Products Industry

Districts	Value of Output (Rs. lakhs)	Percentage Share of Output
Madras	39.67	19.73
Chengalpattu	58.00	28.84
North Arcot	73.80	36.70
Other Districts*	29.63	14.73
Tamil Nadu	210.10	100.00

Source: As Table 17

Note : *Name of districts not specified.

To sum up, all the three divisions of the industry and hence the leather industry as a whole, is concentrated in the North Arcot district of Tamil Nadu. Next comes Chengalpattu, though in terms of contribution to different variables, it does not come anywhere near North Arcot. The leather industry in TN is found to be present also in four other districts -- Madras, Tiruchirapalli, Madurai and Coimbatore.

VII Concluding Remarks

Although India has been producing and exporting tanned leather from the 1850s onwards, the tanners did not venture into leather manufactures industry. The tariff factor was the strongest bottleneck preventing India from making a forceful entry into leather manufactures production for export. Tariff structures in developed countries are such as to encourage the import of raw materials and intermediate products rather than finished products. The rate of tariffs escalated with the progress of the degree of manufacture. By virtue of deliberate state industrialisation, however, a beginning has been made in the leather manufactures production and hence exports in the late seventies.

India's performance in the leather manufactures sphere causes concern because India is bound to gain in terms of employment and degree of self-reliance, if manufactures are produced for export instead of materials being processed for export. By exporting the resources in the semi-processed form, India was losing the benefits of added value and employment opportunities arising from the working up of the tanned leather into manufactures.

With the implementation of the State policy, the once tanning dominated leather industry in TN is yielding place to the leather manufactures industry. A beginning made in this stronghold of the industry has significant portents.

Madras, the capital of TN, has developed as a market and contact centre for the importers. In fact one of the reasons attributed for the location of the tanning industry in TN, was the market contacts in Madras.[9] Marketing of manufactures will face comparatively less difficulties from Madras than from the rest of India.

The tanning industry in the factory sector of TN has developed to cater to international markets.[10] It is only natural that tanning for export does not stop with finishing for export but extend beyond to manufacturing for export so that in case finished leather is restricted for export in future, the leather industry in TN will not decline but will adjust to the new environment.

Finally, an aspect that is worth noticing is other states' response to the policy. In the pre-intervention period apart from the states mentioned - West Bengal and Uttar Pradesh - Maharashtra also had noticeable shares of the industry. But after the implementation of the policy most of the states have started their own leather development corporations.[11] They are attempting to build their leather industries. These states view that TN has been acting as a sink for their raw material. Indeed, TN is utilising 70 per cent of the goat and sheep skins produced in India. The other states also see the benefits of retaining the raw material within their state economy in terms of employment opportunities, industrial development, central Government subsidies etc. Hence, it will not be surprising if in future, a large inflow of raw material from other states into TN is stopped. Then TN industry will be at the brink of disaster (unless ofcourse tanners start using imported raw material).

The Government of India itself has formulated a policy in 1981, prohibiting the issue of licences for finishing capacity to states where the industry is already concentrated.[12] TN is one state, where the industry is already highly concentrated. Not many new finishing plants will get licence in future to come into existence. In that case the development of manufactures industry will reduce the magnitude of decline of the leather industry as a whole in TN and will help TN retain its number one position.

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Foot notes

1. For discussion of limitations of ASI data, see also S.L.Shetty, "Industrial Growth and Structure -- As seen through Annual Survey of Industries", Economic and Political Weekly, Vol.XVII, No. s 39 & 40, Oct. 2 & 9, 1982.

2. Ibid.

2a. The locations for which the Department of Statistics has computed the consumer price index for industrial workers are as follows: Madras city, Cuddalore, Tiruchirapalli, Madurai, Coimbatore, Nagercoil and Coonoor.

3. CSO, ASI, Summary Results for the Factory Sector 1978-79, All India.

4. Dept. of Statistics, Madras, Industrial Profile of TN, 1982.

5. Source: LEPC, Madras

6. Ibid.

7. The rest of the India especially Calcutta, Agra, Kanpur etc. were producing in the pre intervention period itself complete footwear which were not shoes but sandals and chappals. So in the post-intervention period, most of them expanded production. Only some branched into shoe manufacture. On the other hand in TN, most of the production is in the category of shoes and components for shoes.

8. R.D.Higham, 'Survey, India, Indian Government Demands Growth in Finished Leather Exports', Leather, London, May 1973.

9. D.R.Gadgil, The Industrial Evolution of India in Recent Times, 1860-1939, Delhi, Oxford University Press, 1982.

10. Journal of Indian Leather Technologists Association, May 1980; April 1980, Nov.1980, June 1980, Nov.1978.

11. World Trade Review, March 1, 1982, p.19.